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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,827	12/07/2001	Timothy W. Brooks	1067-272	5024

7590 04/23/2003

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EXAMINER

HAMMOND, BRIGGITTE R

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	10/017,827	Applicant(s)	Brooks et al.
Examiner	Brigitte R. Hammond	Art Unit	2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-32 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 20 is/are allowed.

6) Claim(s) 1-5, 7-10, 12-16, 21-26, and 28-31 is/are rejected.

7) Claim(s) 6, 11, 17-19, 27, and 32 is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on Dec 7, 2001 is/are a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

6) Other: _____

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the overmolded connector contained within the shroud and the shroud interengaging with the hard shell connector, the shroud body having an “asymmetrical” polarizing shape and the dielectric grease in the reservoir (claim 6) **must be shown or the features canceled from the claims.** No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8,9,28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the connector and shroud bodies have an “asymmetrical” polarizing shape. They appear to be symmetrical. For examination purposes the examiner shall assume asymmetrical with regard to an imaginary horizontal center plane separating the top and bottom surfaces.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,7,8,10,12,21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis et al. Regarding claims 1,12, 21 and 22, Davis et al disclose a connector pair comprising: an *over-molded connector* 66, comprising:

at least one first terminal at 80 having a first terminal sex; at least one wire (not shown) respectively coupled for electrical communication with each of said at least one terminals; and an overmolded body 70, having an overmolded connector terminal end, an overmolded connector wire end and an overmolded connector outer surface, said overmolded body at least partially encasing said at least one terminal and said at least one wire; *a hardshell shroud* 68 having a first connector sex, said hardshell shroud comprising: a substantially rigid shroud body having a shroud terminal end 72, a shroud wire end 76, and shroud inner and outer surfaces; wherein said overmolded connector is contained within said hardshell shroud; *a hardshell connector housing* 12 having a second connector sex, said hardshell connector housing comprising: at least one second terminal 14 having a second terminal sex; a substantially rigid connector body having inner surface 52 and outer surfaces (not numbered); wherein said hardshell shroud 68 may be

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interengaged with said hardshell connector 12, such that said at least one first terminal 80 engages respective ones of said at least one second terminal 16.

Regarding claims 7 and 8, Davis et al. disclose the shroud 66 and the connector body having an asymmetrical polarizing shape (as shown in figs. 7 and 1 respectively).

Regarding claim 10, Davis et al. disclose the shroud having a latching feature 110.

6. Claims 21,22, 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Buchter et al. Buchter et al. disclose a connector, comprising:

an over-molded connector 80, comprising: at least one first terminal 44 having a first terminal sex; at least one wire 64 respectively coupled for electrical communication with each of said at least one terminals; said over-molded connector 80 having an overmolded body having overmolded connector terminal and wire ends, (see attachment of figure 3), an overmolded connector outer surface, said overmolded body at least partially encasing said at least one terminal and said at least one wire; a hardshell shroud 90 comprising a first connector sex, a substantially rigid shroud body having terminal and wire ends, and inner and outer surfaces; wherein said overmolded connector is contained within said hardshell shroud.

Regarding claim 22, Buchter et al. disclose a hardshell connector housing 20 (see right hand side of fig. 5) having a second connector sex, said hardshell connector housing comprising: at least one second terminal 54 having a second terminal sex; a substantially rigid connector body 22 having inner surface and outer surfaces; wherein said hardshell shroud may be interengaged with said hardshell connector, such that said at least one first terminal engages respective ones of said at least one second terminal.

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Regarding claim 30, Buchter et al. disclose the shroud having an opening formed through the wire end, which allows the wire to pass through (not numbered, shown in fig. 3).

Regarding claim 31, Buchter et al. disclose the shroud having a locking feature 94,96.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1,4,5, 7,8,12,15,16,21,22,25,26,28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suverison et al in view of Chung. Regarding claims 1, and 21, Suverison et al. disclose a connector pair comprising: a molded connector 24, comprising: at least one first terminal 56 having a first terminal sex; at least one wire 22 respectively coupled for electrical communication with each of said at least one terminals; and a molded body 24, having a molded connector terminal end (at 58), a molded connector wire end (at 30) and a molded connector outer surface 64, said molded body at least partially encasing said at least one terminal and said at least one wire; a hardshell shroud having a first connector sex, said hardshell shroud comprising: a substantially rigid shroud body 26 having a shroud terminal end (near 34), a shroud wire end (near 26), and shroud inner and outer surfaces; wherein said molded connector is contained within said hardshell shroud; a hardshell connector housing 70 having a second connector sex, said hardshell connector housing comprising: at least one second terminal 106 having a second terminal sex; a

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substantially rigid connector body having inner surfaces 72 and outer surfaces (not numbered, at 70); wherein said hardshell shroud 26 may be interengaged with said hardshell connector 70, such that said at least one first terminal 56 engages respective ones of said at least one second terminal 102. Suverison et al. do not disclose the molded connector being overmolded. However, overmolding is well known in the art as evidenced by Chung. Chung discloses an overmolded connector 2,3, therefore it would have been obvious to one of ordinary skill to modify the connector of Suverison et al. by overmolding as taught by Chung to protect the wires and terminal.

Regarding claims 12 and 22, Suverison et al. disclose the hardshell shroud may be interengaged with the hardshell connector such that the first terminal engages the second terminal, as shown in fig. 2.

Regarding claims 4, 15 and 25, Suverison et al. disclose a first polarizing feature having a first polarizing sex 32 formed on the molded connector outer surface adjacent the molded connector wire end.

Regarding claims 5, 16 and 26, Suverison et al. disclose a second polarizing feature 41 having a second polarizing sex formed on said shroud inner surface adjacent the shroud wire end, such that said first and second polarizing features interengage.

Regarding claims 7,8, 28 and 29, Suverison et al. disclose the connector and shroud bodies have an “asymmetrical” polarizing shape.

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Claim 3,14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suverison et al. and as applied to claims 1 and 12 above, and further in view of Kelly. Neither nor Suverison et al. disclose a plurality of annular sealing rings formed on the connector outer surface between the connector terminal end. However Kelly teaches a connector assembly 170 comprising a plurality of annular sealing rings 210,292 formed on a first connector outer surface 189 between the connector terminal and wire ends; wherein said sealing rings are held against a second connector body inner surface 222. Therefore it would have been obvious to one of ordinary skill to modify the connector pair of Suverison et al. to form a plurality of annular sealing rings formed on the molded connector outer surface between the terminal end and the wire end to prevent dust and/or contaminants from entering into the connector as taught by Kelly.

9. Claims 2, 13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suverison et al. and as applied to claim 1 above, and further in view of Korsunsky et al. Neither Suverison et al nor disclose the over-molded connector body being injection molded PVC. However, injection molded PVC is well known in the art as evidenced by Korsunsky et al. Korsunsky et al. teach overmolding connectors by PVC injection molding (col.1, lines 36-60). Therefore it would have been obvious to one of ordinary skill to modify the connector of Suverison et al by injection molding the housing using PVC as taught by Korsunsky et al. for preventing contamination.

Allowable Subject Matter

10. Claim 20 is allowed.

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11. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 6, 11,17-19,27 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: regarding claim 6, 17, 20 and 27, the prior art does not disclose a raised sealing ridge formed around a periphery of the overmolded connector terminal end and a reservoir formed within a boundary of said raised sealing ridge and adapted to contain a quantity of dielectric grease; wherein said raised sealing ridge is held against the connector body inner surface when said hardshell shroud is interengaged with said hardshell connector; regarding claim 9, the prior art does not disclose the substantially rigid shroud body having an opening formed through the shroud wire end and allowing said at least one wire to pass therethrough in combination with the other limitations of the base claim, regarding claims 11,18,19 and 32, the prior art at least one second locking feature formed on said connector body and having a second locking feature sex interengaging with a first locking feature.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Buckner 5,928,023 and Ito 5,560,981 were cited for overmolded connectors.

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5. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Brigitte R. Hammond whose telephone number is (703) 305-0032. The examiner can normally be reached on Monday - Thursday from 7:30 A.M. to 5:00 P.M. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley, can be reached on (703) 308-2319. Papers may be faxed directly to Group 2833 at (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Brigitte R. Hammond

April 16, 2003



THO D. TA
PRIMARY EXAMINER